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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,336	03/24/2004	William A. Peterson JR.	051252-5050-03	3493

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SEIMENS CORPORATION  
INTELLECTUAL PROPERTY DEPARTMENT  
170 WOOD AVENUE SOUTH  
ISELIN, NJ 08830

EXAMINER
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MCGRAW, TREVOR EDWIN

ART UNIT	PAPER NUMBER
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3752

MAIL DATE	DELIVERY MODE
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07/30/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/807,336

**Applicant(s)**

PETERSON, WILLIAM A.

**Examiner**

Trevor E. McGraw

**Art Unit**

3752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 May 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 16-27 is/are pending in the application.
- 4a) Of the above claim(s) 16-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 23-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/GS-08)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date 04/29/2010

**DETAILED ACTION**

***Appeal Brief***

In view of the appeal brief filed on 05/17/2010, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

/Len Tran/

Supervisory Patent Examiner, Art Unit 3752.

***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "metering orifices extending through the metering disc along the longitudinal axis and located about the longitudinal axis" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

In addition to Replacement Sheets containing the corrected drawing figure(s), applicant is required to submit a marked-up copy of each Replacement Sheet including annotations indicating the changes made to the previous version. The marked-up copy

must be clearly labeled as "Annotated Sheets" and must be presented in the amendment or remarks section that explains the change(s) to the drawings. See 37 CFR 1.121(d)(1). Failure to timely submit the proposed drawing and marked-up copy will result in the abandonment of the application.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 23-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In regard to Claim 23, Examiner cannot determine how the "metering orifices" are located along and about the longitudinal axis as Applicant does not provide adequate disclosure in the drawing figures as to the location of the orientation of the recited limitations. Examiner cannot fully determine the metes and bounds of Claim 23 in view of Applicant's failure to show the metering orifices that are located about and along the longitudinal axis. Appropriate clarification and or correction is required in response.

Claims 24-27 are rejected as being dependent directly or indirectly to Claim 23.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 23-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Arndt et al (US 5,766,441).

In regard to Claim 23, Arndt et al teach a method of controlling a spray of fuel through at least one metering orifice (38) of a fuel injector (column 3, lines 53-55), the method comprising providing the fuel injector (column 3, lines 53-55) having an inlet (inlet that supplies fuel to the injection valve) and an outlet and a passage (3) extending along a longitudinal axis (2) therethrough, the outlet having a seat (40'<sub>Upper</sub>, 37) and a metering disc (40'<sub>Lower</sub>, 35), the seat (40'<sub>Upper</sub>, 37) having a seat orifice (45) and a first channel surface (bottom of 40'<sub>Upper</sub>) extending obliquely to the longitudinal axis (2), the metering disc (40'<sub>Lower</sub>, 35) including a second surface (top of 40'<sub>Lower</sub>) confronting the first channel surface (bottom of 40'<sub>Upper</sub>) so as to provide a flow channel (42) that is separate from but in communication with the seat orifice (45), the metering disc (40'<sub>Lower</sub>, 35) having a plurality of metering orifices (38) extending therethrough along the longitudinal axis (2) and located about the longitudinal axis (2), the metering orifices (38) being in communication with the flow channel (42), locating all of the metering orifices (38) on a first virtual circle (see Figure 31 where "38" is shown on a virtual circle) outside of a second virtual circle formed by a virtual extension of a sealing surface of the seat (40'<sub>Upper</sub>, 37) on the metering disc (40'<sub>Lower</sub>, 35) such that each of the metering

orifices (38) extends generally parallel to the longitudinal axis through the metering disc (40'<sub>Lower</sub>, 35) and imparting a radial velocity to the fuel flowing from the seat orifice (45) through the flow channel (42) so that fuel flows in transverse direction across and through the fuel metering orifices (38; see where flow travels transverse and out of "38" in Figures 4-8 and 10).

In regard to Claims 24-27, Arndt et al also teach where the locating of the metering orifices (38) includes spacing a first metering orifice (first "38" on virtual circle; see Figure 14) at a first arcuate distance relative to a second metering orifice (second "38" on virtual circle; see Figure 14 and Figure 31) on the first virtual circle (as shown in Figures 14 and 31) and the imparting of a radial velocity to the fuel flow includes configuring the flow channel (42) to extend between a first position and a second position, the first position being located at a first distance (distance of "36" from axis) from the longitudinal axis and at a first spacing along the longitudinal axis relative to the second surface of the metering disc (40'<sub>Lower</sub>, 35) and the second position being located at a second distance (distance of "38" from axis) from the longitudinal axis (2) and a second spacing along the longitudinal axis from the second surface of the metering disc (40'<sub>Lower</sub>, 35), such that a product of the first distance and first spacing is generally equal to a product of the second distance and a second spacing where the imparting increases and decreases the radial velocity between the seat orifice (45) and each of the metering orifices (38; distances closer together increase the radial velocity and distances further apart decrease the radial velocity as shown in the Figures of Arndt et al).

### ***Response to Arguments***

#### **Rejection under 35 USC § 102**

Applicant's arguments with respect to claims 23-27 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Heinbuck et al (US 6,161,782) drawn to a fuel injector with an atomizing disc.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trevor E. McGraw whose telephone number is (571) 272-7375. The examiner can normally be reached on Monday-Friday (2nd & 4th Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Len Tran can be reached on (571) 272-1184. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/T. E. M./  
Examiner, Art Unit 3752

07/28/2010